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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/901,550 | 07/09/2001 | Knut Kahlisch | 2000 P 4162 | 7121 |

7590 11/25/2002

LERNER AND GREENBERG, P.A.
2445 Hollywood Boulevard
Hollywood, FL 33020

EXAMINER

CHU, CHRIS C

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2815

DATE MAILED: 11/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/901,550

Applicant(s)

KAHLISCH ET AL.

Examiner

Chris C. Chu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 11 is/are pending in the application.
- 4a) Of the above claim(s) 8 - 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 7 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on July 9, 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on September 16, 2002 has been received and entered in the case.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following limitation in claim 4 "wherein the flowable material is silicone for forming structures on the support matrix." and the following limitation in claim 7 "said groove is formed to extend into said bonding leads" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect may be deferred until after the examiner has considered the proposed drawing correction. Failure to timely submit the proposed drawing correction will result in the abandonment of the application.

Claim Objections

4. Claim 7 is objected to because of the following informalities: "extend into said bonding leads" should be -- extend toward said bonding leads--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 ~ 3, 5 ~ 7 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Wiech, Jr.

Regarding claim 1, Wiech, Jr. discloses in Figs. 1 and 2 and column 10, lines 42 ~ 46 a support matrix for integrated semiconductors, comprising:

- a frame (1) having at least one bonding channel (30) with an edge formed therein, said frame further having a groove (10) formed therein along said edge of said bonding channel;
- conductor track structures (18) disposed on said frame, said groove formed in said frame functioning as a barrier for preventing a flow of a flowable material from said bonding channel onto said frame and onto said conductor track structures; and

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- contacts, selected from the group consisting of bonding leads and wires (4), connected to said conductor track structures and disposed in said bonding channel, said contacts used for connecting said conductor track structures to an integrated circuit (2).

Regarding claim 2, Wiech, Jr. discloses in Figs. 1 and 2 said barrier (10) being disposed on all sides of said bonding channel and completely surrounding said bonding channel.

Regarding claim 3, Wiech, Jr. discloses in Figs. 1 and 2 said frame (1) having a surface remote from said bonding leads and said barrier being formed in said surface of said frame which is remote from said bonding leads.

Regarding claim 5, Wiech, Jr. discloses in Figs. 1 and 2 said barrier having a region with a parting agent (24) disposed thereon for repelling the flowable material.

Regarding claim 6, Wiech, Jr. discloses in Figs. 1 and 2 a support matrix for integrated semiconductors, comprising:

- a frame (1) having at least one bonding channel (30) with an edge formed therein;
- conductor track structures (18) disposed on said frame, said frame and said conductor track structures having a groove (10) formed therein along said edge of said bonding channel, said groove functioning as a barrier for preventing a flow of a flowable material from said bonding channel onto said frame and onto said conductor track structures; and
- contacts, selected from the group consisting of bonding leads and wires (4), connected to said conductor track structures and disposed in said bonding channel,

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said contacts used for connecting said conductor track structures to an integrated circuit.

Regarding claim 7, Wiech, Jr. discloses in Figs. 1 and 2 said groove being formed to extend into said bonding leads.

Regarding claim 11, Wiech, Jr. discloses in Figs. 1 and 2 a support matrix for integrated semiconductors, comprising:

- a frame (1) having at least one bonding channel (30) with an edge formed therein;
- conductor track structures (18) disposed on said frame,
- contacts, selected from the group consisting of bonding leads and wires (4), connected to said conductor track structures and disposed in said bonding channel, said contacts used for connecting said conductor track structures to an integrated circuit (2); and
- a barrier (10) formed along said edge, said barrier having a parting agent (24) disposed thereon for repelling a flowable material from said bonding channel onto said frame and onto said conductor track structures.

Further, the phrase “for repelling a flowable material from said bonding channel onto said frame and onto said conductor track structures” is functional language which does not differentiate the claimed apparatus from Wiech, Jr.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiech, Jr. in view of Roberts et al.

Wiech, Jr. discloses in column 10, lines 42 ~ 46 the flowable material for forming a structure on the support matrix.

Wiech, Jr. does not disclose silicone as the flowable material. However, Roberts et al. discloses in column 8, lines 21 and 22 silicone as the flowable material. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wiech, Jr. by using silicone for the flowable material as taught by Roberts et al. The ordinary artisan would have been motivated to modify Wiech, Jr. in the manner described above for at least the purpose of increasing a chip protection.

Response to Arguments

9. Applicant's arguments filed September 16, 2002 have been fully considered but they are not persuasive.

On page 5, applicant argues “[I]t is questionable if the recess 30 of Fig. 1 of Wiech, Jr. is a bonding channel because the most obvious purpose of the recess 30 is to receive a semiconductor chip 2. Although there are bond connections 4A and 3A on the upper side of the semiconductor chip 2 within the recessed surface portion, the height of these bond contact is above the recess.” The argument is not persuasive since it attempts to distinguish the claim from Wiech, Jr. merely through semantics. Whether one refers to element (30) as recess or bonding channel, no patentable difference exists since there is no structural difference.

Further, applicant argues “[A]pplicants believe that Wiech, Jr. does not disclose that the grooves serve as a barrier for flowable material.” Such argument is not persuasive because function of the claimed invention must result in a structural difference between the claimed invention and Wiech, Jr. in order to patentably distinguish the claimed invention from Wiech, Jr.

Furthermore, applicant argues “... the bonding wires 3, 4 are disposed above the bonding channel rather than therein.” Such argument is not persuasive because Wiech, Jr. clearly shows in Fig. 2 the bond wires 3, 4 are disposed in the bonding channel (30).

For the above reasons the rejection is maintained.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

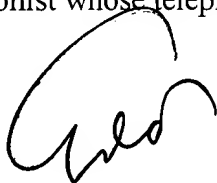
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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris C. Chu whose telephone number is (703) 305-6194. The examiner can normally be reached on M-F (10:30 - 7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Chris C. Chu
Examiner
Art Unit 2815

EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

c.c.
November 24, 2002